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ABSTRACT

Several technical issues related to the Schools and Staffing Survey (SASS) were studied. The 1990-91 SASS is a set of four inter-related surveys of public and private elementary and secondary schools, districts, teachers, and administrators conducted by the National Center for Education Statistics (NCES). Preliminary analysis of the 1990-91 SASS showed estimates for the total number of public school teachers in 10 states that were at least 15% higher than estimates from the Common Core of Data for each state. One reason for this discrepancy was that school administrators did not report information in the same way in both surveys. The Special Surveys and Analysis Branch of the NCES established a procedure to bring SASS estimates into line with CCD estimates for the 10 states studied. This paper describes the adjustment process for the remaining 40 states and the District of Columbia and evaluates the prevalence and seriousness of the over-reporting and the impact of the adjustment on other national and state SASS estimates. Report sections are: (1) "Background and Purpose"; (2) "Definition of the Two Databases"; (3) "Datasets and Variables"; (4) "Technical Approach"; and (5) "Results and Conclusions." (Contains eight tables and two figures.) (SLD)

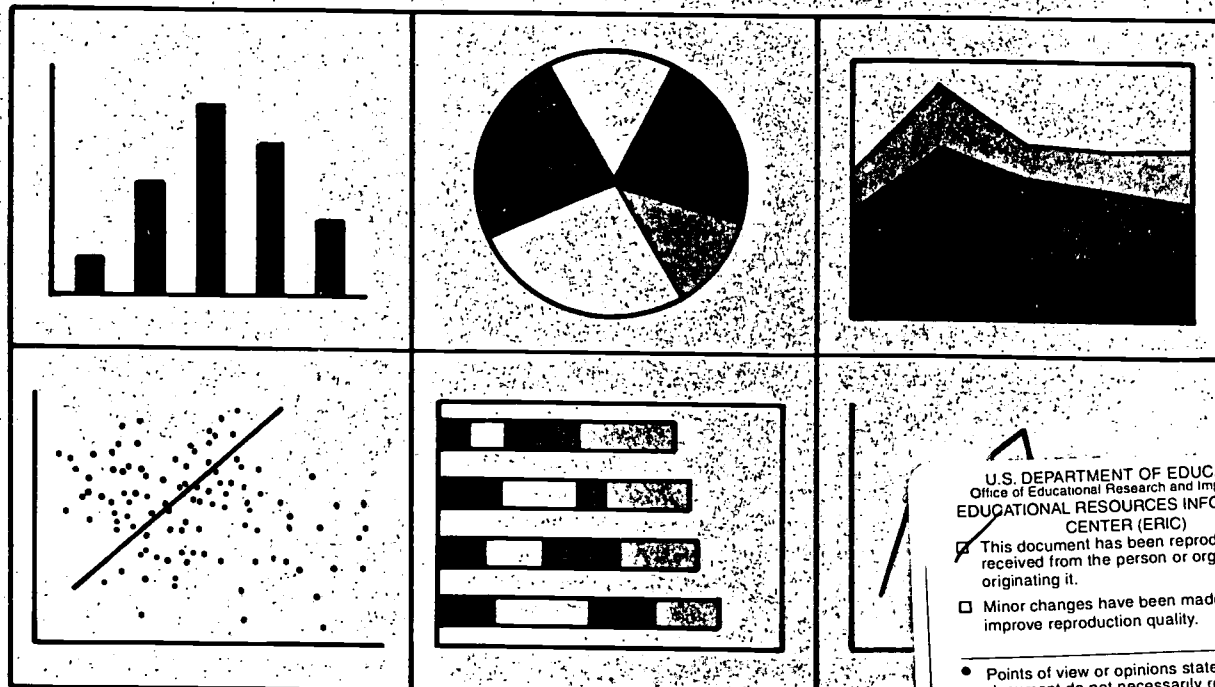# NATIONAL CENTER FOR EDUCATION STATISTICS

## Working Paper Series

*CCD ADJUSTMENT TO THE 1990-91 SASS:*

*A COMPARISON OF ESTIMATES*

Working Paper No. 95-08                    February 1995

**U.S. Department of Education**
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# CCD ADJUSTMENT TO THE 1990-91 SASS:

# A COMPARISON OF ESTIMATES

Working Paper No. 95-08                    February 1995

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February 1995

# Foreword

Each year a large number of written documents are generated by NCES staff and individuals commissioned by NCES which provide preliminary analyses of survey results and address technical, methodological, and evaluation issues. Even though they are not formally published, these documents reflect a tremendous amount of unique expertise, knowledge, and experience.

The *Working Paper Series* was created in order to preserve the valuable information contained in these documents and to promote the sharing of valuable work experience and knowledge. However, these documents were prepared under different formats and did not undergo vigorous NCES publication review and editing prior to their inclusion in the series. Consequently, we encourage users of the series to consult the individual authors for citations.

To receive information about submitting manuscripts or obtaining copies of the series, please contact Suellen Mauchamer at (202) 219-1828 or U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, 555 New Jersey Ave., N.W., Room 400, Washington, D.C. 20208-5652.

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# CCD ADJUSTMENT TO THE 1990-91 SASS:

# A COMPARISON OF ESTIMATES

Prepared for

National Center for Education Statistics

Submitted to

U.S. Department of Education
Washington, DC

November 1994

Prepared by

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# Preface

This report evaluated several technical issues related to the 1990-91 Schools and Staffing Survey (SASS) estimates and survey operations. It was prepared by Synectics for Management Decision Inc., a contractor to the National Center for Education Statistics, as Task 20B.2 under Contract No. RN-91-0600.01.

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# I. Background and Purpose

This project, CCD Adjustments to the 1990-91 Schools and Staffing Survey (SASS), called for an evaluation of several technical issues related to SASS estimates and survey operations. The purpose of the evaluation was to help in the interpretation of SASS data and the improvement of SASS survey operations.

Preliminary analysis of the 1990-91 SASS showed estimates of the total number of public school teachers in 10 specific states were at least 15 percent higher than Common Core of Data (CCD) estimates for each state. One cause for these overestimates was that school administrators, responding to SASS, did not report school information in the same way in the 1990-91 SASS as was reported in the 1990-91 CCD. For example, a school with grades K-8 at one address might be two CCD schools - an elementary school with grades K-6 and a middle school with grades 7 and 8. The elementary school may have been sampled for SASS, but the principal reported for both elementary and middle school, etc.

The Special Surveys and Analysis Branch of the National Center for Education Statistics (NCES) established a post processing edit to bring SASS estimates of teacher counts for ten individual states in line with CCD estimates. The following ten states were selected as initial "problem" states. The number in parenthesis indicates the Federal Information Processing Standard (FIPS) code for each state: Arizona (04), Arkansas (05), Iowa (19), Missouri (29), Montana (30), Nebraska (31), North Dakota (38), Oklahoma (40), South Dakota (46), and Wisconsin (55). The post processing edit developed a set of guidelines which: (1) established situations in which the 1990-91 SASS data should be edited to conformance with CCD; (2) indicated how the individual data should be adjusted; and (3) detailed the computer changes for all specific cases in which data needed to be adjusted.

The purpose of this project was to conduct a comparable adjustment for the remaining 40 states and the District of Columbia, to evaluate the prevalence and seriousness of the over-reporting, and to evaluate the impact of making the adjustment in the remaining states on state and national SASS estimates, and as directed by NCES, to contact problem schools to determine the reasons for the discrepancy between SASS and CCD.

The post processing edit, as implemented on the initial ten states, was modified and applied to the remaining 40 states and the District of Columbia. A detailed description of the original rules established by NCES and how they were modified is located in the Section IV of this report.

Estimates were generated for five characteristics of schools based upon application of the modified post processing edit: the number of full-time equivalent teachers, total student enrollment, the number of Hispanic students (grades K-12), the number of students participating in extended day or before- or after-school day care, and the number of students who receive free or reduced price lunches. These estimates were then compared to official estimates from the 1990-91 SASS.

This report compares estimates from the two databases, the Pre-post Adjusted 1990-91 SASS and the Post Processing Adjusted 1990-91 SASS. The 1990-91 SASS is a set of four interrelated national surveys of public and private elementary and secondary schools, districts, teachers, and administrators conducted by the National Center for Education Statistics (NCES). The CCD, NCES' primary dataset on elementary and secondary public schools in the United States, is a national statistical database from which information can be compared across all states. One of the purposes of the sample design for the 1990-91 SASS is to produce estimates for public schools at the national and state level. This report will examine those estimates and compare them to estimates from the CCD.

The 1990-91 SASS defines a public school as an institution which provides educational services and: (1) has at least one of grades 1-12 (or comparable ungraded), (2) has one or more teachers to give instruction, (3) is located in one or more buildings, (4) receives public funds as primary support, (5) has an assigned administrator, and (6) is operated by an education agency.[1]

The 1990-91 CCD defines a public school as an institution which provides educational services and: (1) has one or more grade groups (Prekindergarten - 12), (2) has one or more teachers to give instruction, (3) is located in one or more buildings (4) has an assigned administrator, (5) receives public funds as primary support, and (6) is operated by an education agency.[2]

A comparison at the individual record level between public school data from the 1990-91 SASS and the 1990-91 CCD is possible because each defines a public school in the same way with one exception. CCD includes prekindergarten through 12th grade. This exception does not effect our comparison because the SASS definition of a public school fits within the CCD definition. This comparison examines SASS data against CCD data.

This report: (1) describes the two data bases, SASS and CCD; (2) details the steps taken in applying the modified post-processing edit to the remaining 40 states and Washington D.C.; and (3) compares estimates from the 1990-91 SASS with newly generated estimates based upon adjustments to SASS for comformance to CCD.

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[1]The SASS definitions used in this report are from the 1990-91 "Schools and Staffing in The United States: A Statistical Profile, 1990-91" and the "1990-91 Schools and Staffing Survey: Data File User's Manual." NCES 93-144 - Volume I, January 1994.

[2]The CCD definitions used in this report are from the 1991-92 School Year "The Nonfiscal Surveys of the Common Core of Data." NCES, December 1991.

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## II.     Description of the Two Databases

### A.     Schools and Staffing Survey (SASS)

The 1990-91 SASS is a set of four interrelated national surveys of public and private elementary/secondary schools, districts, teachers, and administrators conducted by the National Center for Education Statistics (NCES). The sample is designed to produce 1) national estimates for public and private schools, 2) state estimates for public schools, 3) state/elementary, state/secondary, and national combined public school estimates, and 4) detailed association estimates and grade-level estimates for private schools.

The components making up the SASS are:

1.     The Teacher Demand and Shortage (TDS) survey targets public school district personnel who provide information about their district's student enrollment, number of teachers, position vacancies, new hires, teacher salaries and incentives, and hiring and retirement policies (sample sizes: 5,424 public and 3,270 private).

2.     The School Administrator Survey focuses on teaching and administrative background information of school principals/headmasters (sample sizes: 9,687 public and 3,270 private).

3.     The School Survey includes information on student characteristics, staffing patterns, student-teacher ratios, types of programs and services offered, length of school day and school year, graduation and college application rates, and teacher turnover rates. The 1990-91 private school questionnaire incorporates questions on aggregate demand for both new and continuing teachers (sample sizes: 9,687 public and 3,270 private).

4.     The Teacher Survey focuses on teacher qualifications, including their training, experience, and certification. It also includes information on teacher workload, perceptions and attitudes about teaching, job mobility, and working conditions (sample sizes: 56,051 public and 9,166 private).

### Sample Design for 1990-91 SASS

The school sample is a single-stage sample stratified by state/by school level in public schools, and by state/by affiliation/by school level in private schools. Schools are systematically selected using a probability proportionate to the number of teachers within the school. For the private sector, an area sample of approximately 600 schools is used to improve the coverage of the list frame.

The school districts to which the selected public schools belong comprised the district sample. The administrators of the selected schools comprised the administrator sample.

Within the first-stage school sample, a second-stage teacher sample is selected stratified by teacher experience level (teachers with three or fewer years of experience were classified as "new" and all other teachers were classified as "experienced"). Within a school, teachers are selected systematically with equal probability. The average number of teachers selected per school depend upon the school level and sector (four, eight, and six teachers were selected respectively within elementary, secondary and combined schools for the public sector; and four, five, and three teachers were selected respectively within elementary, secondary and combined schools for the private sector.) A supplemental sample of 2,121 bilingual/English as a Second Language (ESL) teachers was added to improve bilingual/ESL teacher estimates.

Significant changes in the sampling frames from which schools were selected occurred between the 1987-88 and 1990-91 SASS. In the 1987-88 SASS, the primary frame for both the public and private sectors was a list of schools provided by Quality Education Data, Inc. (QED). In the 1990-91 SASS, the public school frame was a list of schools developed from the 1988-89 CCD. For private schools, the 1988-89 QED list (supplemented by lists from private schools associations) had been used for a universe survey called the 1989-90 Private School Survey (PSS). The same frame, with information added from the PSS, was used to select the private school sample. The list frame was supplemented by an area sample, and the number of primary sampling units (PSUs) was increased from 75 to 123.

## B.    Common Core of Data (CCD)

The Common Core of Data (CCD) is a comprehensive national statistical database comparable across all states on all public elementary and secondary schools, education agencies and state education programs. The CCD contains three categories of information: general descriptive information, basic statistics, and fiscal data. The general descriptive information includes names, addresses, and administrative information; basic statistics include numbers of students and teachers, demographic information on each, and high school completion rates; and fiscal data are revenues and current expenditures. The CCD is maintained in three separate, but linked, data sets: (1) schools, (2) education agencies, and (3) states.

> The purpose of the CCD is to provide basic statistical information on all children in this country enrolled in public schools from prekindergarten through twelfth grade. In addition, it provides basic statistical information on the funds collected and expended for providing public elementary and secondary education.
>
> The objectives of the CCD are:
>
> (1)    to provide an official listing of public elementary and secondary schools and school districts in the nation; and

(2)     to provide basic information and descriptive statistics on public elementary and secondary schools and schooling.


## III.     Datasets and Variables

The SASS data file used for the adjustment is the 1990-91 SASS School data file cataloged under

ZEEWRM.SASS3A3B.YR9091.NCES.SCHOOL.SAS

on the Boeing mainframe.

The CCD data files used for comparison with the SASS data file are Public School data files from the 1988-89 and 1990-91 releases of Common Core of Data on CD-ROM provided by NCES.

The linkage between SASS and CCD datasets is through an identification variable called "CCDIDSCH" that enables the appropriate data files to be merged and then matched. A list of all variables used in the adjustment process is provided in Appendix A.


## IV.     Technical Approach

An adjustment of 1990-91 SASS data to appropriate CCD grade ranges was made for ten states based on a methodology developed by staff of the Special Surveys and Analysis Branch of NCES.

A Statistical Analysis System Software program was written to:

(1)     compare CCD and Comparable Variables on the 1990-91 SASS datasets; and

(2)     adjust and modify the 1990-91 SASS Public School Data so that SASS has comparable grade range to the 1990-91 CCD.

A copy of the computer program used in implementing the adjustment to the 1990-91 SASS is provided in Appendix B.

CCD has certain basic information including: grade-range, number of teachers, and number of students. Assuming that there is not a change in schools from the time of sampling (1988-89 CCD) to data collection (1990-91 SASS), CCD and SASS estimates for these variables should be the same or similar. Because this was not the case in ten states, SASS estimates for individual school records in these states were compared to CCD individual school records. CCD, for the most part was assumed to be accurate. Therefore, NCES established rules for making CCD adjustments to the 1990-91 SASS in these ten states in which certain characteristics of schools appeared to be overestimated. The ten states are [the number in parenthesis indicates the Federal Information Processing Standard (FIPS) code for

each state]: Arizona (04), Arkansas (05), Iowa (19), Missouri (29), Montana (30), Nebraska (31), North Dakota (38), Oklahoma (40), South Dakota (46), and Wisconsin (55). These rules (1) established situations in which data from the 1990-91 SASS should be changed; (2) indicated how the data should be adjusted; and (3) detailed the computer changes for all specific data adjustments.

The purpose of changing the data is to compare specific characteristics of schools from the 1990-91 SASS with characteristics of the same schools from the 1990-91 CCD in order to investigate the source of overestimation on the 1990-91 SASS. Data from the CCD are believed to be more accurate. Therefore, in certain situations in which individual school records from the 1990-91 SASS are different than the CCD, the SASS data were adjusted according to CCD standards.

The guidelines which establish when and if data should be adjusted (number 1 below) are based upon a comparison of individual school records from the 1990-91 SASS with individual records of the same school from the 1990-91 CCD. The specific rules on how to change the data from the 1990-91 SASS (number 2 below) are designed to adjust the records of specific school characteristics from the 1990-91 SASS to bring them in line with CCD records of the same school characteristics. Data from actual responses from the 1990-91 SASS questionnaire are the items which are adjusted in this process. In order to complete the adjustment, certain changes had to made on how the data on individual records of school characteristics are computed (number 3 on page 8).

(1)     The guidelines established were: the data should be changed if the
        1990-91 SASS reports one of grades K through 12 and CCD reports
        elementary, middle, or secondary only. The data should not be changed if the
        difference in grade range from the 1990-91 SASS and CCD was only one
        grade. The data were not altered if the only difference between estimates from
        the 1990-91 SASS and CCD appeared in prekindergarten and/or ungraded
        categories. In addition, the data were not changed if CCD enrollment is zero
        and the type of school was either special education or vocational/technical.

(2)     The following list indicates how the data from the 1990-91 SASS were
        adjusted. The items in parenthesis are the column codes from the 1990-91
        SASS questionnaire which corresponds to a specific characteristic.[3] For
        example, the school characteristic in a) is grade level and student enrollment
        and the corresponding column codes are SC069-SC100.

        a)     For grade level and student enrollment (SC069 - SC100): Set Yes/No
               and enrollment to missing for grades for which CCD reports 0
               enrollment.

---

[3]The column codes referred to in this report are from the "1990-91 Schools and Staffing Survey: Data File User's Manual." NCES 93-144 - Volume I, January 1994.

b)  For student enrollment, in head counts, grades K-12 or comparable ungraded levels (SC012): Sum total enrollment for October 1, 1990 [SC074 to SC098 (even numbers)] and put in SC012 and total student enrollment for October 1, 1990 (SC101). (Add prekindergarten and postsecondary for SC101.)

c)  Divide the new SC012 by the original SC012 - this will establish a new ratio and will be referred to as RATIO.

d)  Multiply student enrollment as of the first of October for current school year (SC013) by RATIO to establish new SC013. (Round it to a whole number.)

e)  For school level (SC014): Set to elementary, if new grade range is K-6, K-8 *(=1)*.
    Set to middle, if new grade range is 6-8, 6-8, 6-9, 7-8, 7-9 *(= 2)*.
    Set to secondary, if new grade range is 7-12, 8-12, 9-12, 10-12 *(=3)*.
    Set to combined for all other cases *(= 4)*.

f)  For ethnic origin (SC022 - SC026): Use RATIO to adjust. (Round to whole numbers and verify that sum of SC022 to SC026 = SC012.)

g)  For prekindergarten program (SC043): If the grade level prekindergarten (SC071) is "no" or "missing," then
    set SC043 = 2 and
    set SC044 = missing.

h)  For kindergarten (SC046): If the grade level kindergarten (SC073) is "no" or "missing," then
    set SC046 = 2 and
    set SC047 = missing and
    set SC048 = missing.

i)  For Chapter 1 services (SC051): If SC051 = 2, do not change SC051 - SC054.
    If SC051 = *1*, set SC051 - SC054 to missing.

j)  For eligibility for free or reduced price lunch (SC055): If SC055 = 2, do not change SC055 - SC058.
    If SC055 = *1*, set SC055 - SC058 to missing.

k)  For grade 12 (SC104): If SC104 = *1* and grade level 12 (SC097) = *1*, do not change SC104 - SC113.
    If SC104 = 2, do not change SC104 - SC113.
    If SC104 = *1* and SC097 = missing, then
    set SC104 = 2 and
    set SC105 - SC113 = missing.

l)      For unpaid volunteers (SC172): If SC172 = 2, do not change.
        If SC172 = 1, set SC172 and SC173 to missing.

m)      Multiply CCD teacher/student ratio by new SC012 - Put result in new
        total number of teachers for grades K-12 (SC116) (rounded). If CCD
        number of teachers = 0 (missing), use RATIO from step c to adjust.

n)      Set number of full-time teachers for grades K-12 (SC114) and number
        of part-time teachers for grades K-12 (SC115) to missing.

o)      For teacher ethnic origin (SC117 - SC121): If any are 0, do not change.
        If SC117 - SC120 are 0, put SC116 into SC121.
        Otherwise, set nonzero SC117 - SC121 to missing.


(3)     The following list expresses all the computer changes for data adjustments.
        The items in parenthesis are the column codes (see footnote number 3 on
        page 6) from the 1990-91 SASS questionnaire which corresponds to a specific
        characteristic. For example, the school characteristic in a) is student absentee
        rating and the corresponding column code is SC021.

        a)      For student absentee rating (SC021): Set to missing unless 0
                (keep all 0's).

        b)      For availability of specific curriculum (SC027 - SC042): Keep "NO's".
                Set "YES's" and number of students to missing.

        c)      For library/media center (SC049 - SC050): Set to missing.

        d)      For new teachers for grades K-12 (SC128 - SC153): Set to missing
                even if it's 0.

        e)      For full- or part-time positions (SC154 - SC171): Set to missing unless 0.
                (keep 0's.)

        f)      For teacher vacancies (SC174 - SC191): Set to missing.

        g)      For teacher absentee rating (SC122 - SC127): Set to missing unless 0.
                (keep 0's.)

These rules were modified when applied to the remaining 40 states and the District of
Columbia. Attempts to apply the original rules for adjusting data from the 1990-91 SASS to
the remaining 40 states and the District of Columbia uncovered certain flaws. There were
certain situations that the original rules did not address.

In order to make CCD adjustments to SASS data from all 50 states and the District of Columbia the following modifications were established:

> In indicating how the data should be adjusted (2), two additions were made: For teacher ethnic origin (SC117-SC121), add the statement "do not change the 0's." For prekindergarten program (SC043), set 045 = missing.

The criteria used for adjusting the data, required modifying the data for 300 schools in 40 states and the District of Columbia. Table 1a (below) shows the weighted full-time equivalent teacher counts for the 10 primary "problem" states initially adjusted by NCES. Weighted full-time equivalent teacher counts for these 10 states, using the same process provided for the 40 additional states and the District of Columbia are also shown in Table 1b on page 10. The weighted teacher counts in table 1b are referred to as "post adjusted."

**Table 1A.--SASS - 3A Weighted teacher counts for the ten "problem" states**
**1990-91 full-time equivalent teachers**

| FIPS CODE | STATE | CCD DATA | 1990-91 SASS DATA* | AFTER ORIGINAL NCES ADJUSTMENT SASS/CCD (IN PERCENT) |
|---|---|---|---|---|
| 04 | Arizona | 32,987 | 30,746 | 93.21 |
| 05 | Arkansas | 25,984 | 27,091 | 104.26 |
| 19 | Iowa | 31,045 | 33,850 | 109.04 |
| 29 | Missouri | 52,304 | 53,916 | 103.08 |
| 30 | Montana | 9,613 | 10,479 | 109.01 |
| 31 | Nebraska | 18,764 | 18,732 | 99.83 |
| 38 | North Dakota | 7,591 | 8,175 | 107.69 |
| 40 | Oklahoma | 37,221 | 38,307 | 102.92 |
| 46 | South Dakota | 8,511 | 10,072 | 118.34 |
| 55 | Wisconsin | 49,302 | 56,214 | 114.02 |

Source: U.S. Department of Education, NCES 1990-91 SASS: Data File User's Manual, Volumes I-II (Teachers Questionnaire)

* The SASS numbers contained in this table are after the original NCES adjustment.

**Table 1B.--SASS - 3A Weighted teacher counts for the ten problem states**
**1990-91 full-time equivalent teachers (post adjusted)**

| FIPS CODE | STATE | CCD DATA | 1990-91 SASS DATA* | AFTER MODIFICATION ADJUSTMENT SASS/CCD (IN PERCENT) |
|-----------|-------|----------|--------------------|-----------------------------------------------------|
| 04 | Arizona | 32,987 | 30,159 | 91.43 |
| 05 | Arkansas | 25,984 | 27,091 | 104.26 |
| 19 | Iowa | 31,045 | 33,402 | 107.59 |
| 29 | Missouri | 52,304 | 52,632 | 100.63 |
| 30 | Montana | 9,613 | 10,363 | 107.80 |
| 31 | Nebraska | 18,764 | 18,107 | 96.50 |
| 38 | North Dakota | 7,591 | 7,953 | 104.77 |
| 40 | Oklahoma | 37,221 | 37,337 | 100.31 |
| 46 | South Dakota | 8,511 | 9,863 | 115.89 |
| 55 | Wisconsin | 49,302 | 55,207 | 111.98 |

Source: U.S. Department of Education, NCES, 1990-91 CCD (State Aggregate - Public
School File), 1990-91 SASS (Public School File)

* The SASS numbers contained in this table are after the original NCES adjustment.

**Problems in Matching Schools from the 1990-91 SASS to the 1990-91 CCD**

One hundred and fifty-five schools in the 1990-91 SASS public school dataset are not
available in the 1990-91 CCD dataset. Either the NCES agency identification number or the
School identification number changed. Data from 29 out of the 155 schools in the 1990-91
SASS dataset which are not included in the 1990-91 CCD dataset, required adjustment.
Information from the 1988-89 CCD file was used in adjusting the data for these 29 schools.
Table 2 on page 11 shows the list of 29 schools with their corresponding CCD identification
numbers (ACCDID) and SASS control numbers (CNTLNUM).

Attempts to match certain public schools from the 1990-91 SASS to the 1990-91 CCD failed
because the NCES school identification number and/or the agency identification number
changed from the time of the 1988-89 CCD *(the sample frame for the 1990-91 SASS)* to the
1990-91 CCD. Administrators at these schools received and filled-out a 1990-91 SASS
questionnaire because the school address did not change or the questionnaire was forwarded
to the appropriate new address. A possible explanation for the change in NCES school
identification number and/or agency identification number is an organizational adjustment at
the school district level. For example, a school may have changed from an elementary school
in 1988 to a special education school in 1991. The NCES agency and/or school identification
number may have been changed on the 1991 CCD because of the change in type of school.
On the 1990-91 SASS, however, the change in school type and identification number may not
have been indciated by the administrator who completed the questionnaire. Therefore, the
school would have been recorded on the 1990-91 SASS according to its 1988 identification
number.

## Table 2.--1990-91 SASS schools adjusted To 1988-89 CCD data

| Observation | ACCDID | CNTLNUM |
|---|---|---|
| 1 | 020000500607 | 002100550137 |
| 2 | 020048000614 | 002102050330 |
| 3 | 020067000605 | 002103050139 |
| 4 | 040187000124 | 004102350138 |
| 5 | 060813007675 | 006103250132 |
| 6 | 061392008839 | 006105700137 |
| 7 | 120018002045 | 012100500736 |
| 8 | 120018002489 | 012100551237 |
| 9 | 130000101704 | 013100150131 |
| 10 | 130465001636 | 013108150139 |
| 11 | 170993000913 | 017105451432 |
| 12 | 180291000379 | 018103250137 |
| 13 | 220018001867 | 022101450339 |
| 14 | 220066001875 | 022102950230 |
| 15 | 220138001890 | 022105150236 |
| 16 | z220177001845 | 022106400235 |
| 17 | 220189001848 | 022106850232 |
| 18 | 220195001852 | 022107050236 |
| 19 | 231071000345 | 023105050135 |
| 20 | 231436000703 | 023108950137 |
| 21 | 268024007500 | 026116650235 |
| 22 | 279018002063 | 027113200136 |
| 23 | 280216000365 | 028104400135 |
| 24 | 290000002342 | 029100150539 |
| 25 | 291229000854 | 029104550138 |
| 26 | 390437500315 | 039101150238 |
| 27 | 390437800506 | 039101250533 |
| 28 | 403222001941 | 040118250136 |
| 29 | 483912004463 | 048122100338 |

Source: U.S. Department of Education, NCES, 1990-91 CCD and 1990-91 SASS

## Tables for Specific School Characteristics

The original rules (for the initial 10 "problem" states) with the modifications described on page 8 were applied to the remaining 40 states and the District of Columbia. Tables 3 and 4 on pages 12 and 13 demonstrate the number of FTEs and total student enrollment for the 1990-91 SASS and the 1990-91 CCD. Estimates are presented before and after CCD adjustment and in terms of SASS as percentage of CCD (SASS/CCD). The original ten problem states are shaded. These states do not report values for SASS/CCD which are greater than 115 percent (before adjustment) for FTEs because the 1990-91 SASS values in these tables were previously adjusted according to the original NCES post processing edit.

Tables 5, 6, and 7 on pages 14 through 16 express the original 1990-91 SASS data, the data after the CCD adjustment, and the percentage of the change for three characteristics of schools: number of Hispanic students (grades K-12), number of students participating in extended day or before- or after-school day care, and the number of students who receive free or reduced price lunches.

Table 3.--FTE Teachers for 1990-91 CCD, 1990-91 SASS Before and After CCD Adjustment

| STATE | Before Adjustment | | | After Adjustment | | |
|---|---|---|---|---|---|---|
| | CCD | SASS | SASS/CCD | CCD | SASS | SASS/CCD |
| U.S Total | 2,397,351 | 2,438,592 | 101.72% | 2,397,351 | 2,381,943 | 99.36% |
| Alabama | 36,266 | 40,769 | 112.42% | 36,266 | 40,112 | 110.60% |
| Alaska | 6,710 | 6,610 | 98.51% | 6,710 | 5,850 | 87.18% |
| Arizona | 32,987 | 30,746 | 93.21% | 32,987 | 30,159 | 91.43% |
| Arkansas | 25,984 | 27,091 | 104.26% | 25,984 | 27,091 | 104.26% |
| California | 217,228 | 206,996 | 95.29% | 217,228 | 204,148 | 93.98% |
| Colorado | 32,342 | 34,462 | 106.55% | 32,342 | 33,179 | 102.59% |
| Connecticut | 34,549 | 34,300 | 99.28% | 34,549 | 33,994 | 98.39% |
| Delaware | 5,961 | 5,900 | 98.98% | 5,961 | 5,858 | 98.27% |
| District of Columbia | 5,950 | 5,543 | 93.16% | 5,950 | 5,956 | 100.10% |
| Florida | 108,088 | 105,167 | 97.30% | 108,088 | 99,479 | 92.04% |
| Georgia | 63,058 | 66,703 | 105.78% | 63,058 | 65,414 | 103.74% |
| Hawaii | 9,083 | 10,198 | 112.28% | 9,083 | 10,198 | 112.28% |
| Idaho | 11,254 | 11,500 | 102.19% | 11,254 | 11,119 | 98.80% |
| Illinois | 108,775 | 116,754 | 107.34% | 108,775 | 115,385 | 106.08% |
| Indiana | 54,509 | 55,528 | 101.87% | 54,509 | 55,021 | 100.94% |
| Iowa | 31,045 | 33,850 | 109.04% | 31,045 | 33,402 | 107.59% |
| Kansas | 29,140 | 31,646 | 108.60% | 29,140 | 30,795 | 105.68% |
| Kentucky | 36,777 | 37,673 | 102.44% | 36,777 | 36,873 | 100.26% |
| Louisiana | 45,377 | 45,271 | 99.77% | 45,377 | 42,841 | 94.41% |
| Maine | 15,513 | 16,069 | 103.58% | 15,513 | 15,289 | 98.56% |
| Maryland | 42,562 | 39,201 | 92.10% | 42,562 | 39,201 | 92.10% |
| Massachusetts | 54,003 | 59,667 | 110.49% | 54,003 | 57,348 | 106.19% |
| Michigan | 80,008 | 78,497 | 98.11% | 80,008 | 76,285 | 95.35% |
| Minnesota | 43,753 | 44,329 | 101.32% | 43,753 | 39,933 | 91.27% |
| Mississippi | 28,062 | 28,661 | 102.13% | 28,062 | 28,446 | 101.37% |
| Missouri | 52,304 | 53,916 | 103.08% | 52,304 | 52,632 | 100.63% |
| Montana | 9,613 | 10,479 | 109.01% | 9,613 | 10,363 | 107.80% |
| Nebraska | 18,764 | 18,732 | 99.83% | 18,764 | 18,107 | 96.50% |
| Nevada | 10,373 | 10,391 | 100.17% | 10,373 | 9,960 | 96.02% |
| New Hampshire | 10,637 | 10,852 | 102.02% | 10,637 | 9,924 | 93.30% |
| New Jersey | 79,886 | 89,630 | 112.20% | 79,886 | 89,289 | 111.77% |
| New Mexico | 16,703 | 17,491 | 104.72% | 16,703 | 17,421 | 104.30% |
| New York | 176,390 | 168,796 | 95.69% | 176,390 | 161,839 | 91.75% |
| North Carolina | 64,283 | 67,226 | 104.58% | 64,283 | 66,961 | 104.17% |
| North Dakota | 7,591 | 8,175 | 107.69% | 7,591 | 7,953 | 104.77% |
| Ohio | 102,714 | 103,214 | 100.49% | 102,714 | 102,657 | 99.94% |
| Oklahoma | 37,221 | 38,307 | 102.92% | 37,221 | 37,337 | 100.31% |
| Oregon | 26,163 | 25,905 | 99.01% | 26,163 | 25,522 | 97.55% |
| Pennsylvania | 100,275 | 109,205 | 108.91% | 100,275 | 107,545 | 107.25% |
| Rhode Island | 9,522 | 10,640 | 111.74% | 9,522 | 10,508 | 110.35% |
| South Carolina | 36,963 | 38,989 | 105.48% | 36,963 | 38,945 | 105.36% |
| South Dakota | 8,511 | 10,072 | 118.34% | 8,511 | 9,863 | 115.89% |
| Tennessee | 43,051 | 44,017 | 102.24% | 43,051 | 43,964 | 102.12% |
| Texas | 219,298 | 211,873 | 96.61% | 219,298 | 203,900 | 92.98% |
| Utah | 17,884 | 18,337 | 102.53% | 17,884 | 18,216 | 101.86% |
| Vermont | 7,257 | 6,911 | 95.23% | 7,257 | 6,911 | 95.23% |
| Virginia | 63,638 | 61,686 | 96.93% | 63,638 | 61,686 | 96.93% |
| Washington | 41,764 | 44,768 | 107.19% | 41,764 | 44,002 | 105.36% |
| West Virginia | 21,476 | 22,286 | 103.77% | 21,476 | 21,704 | 101.06% |
| Wisconsin | 49,302 | 56,214 | 114.02% | 49,302 | 55,207 | 111.98% |
| Wyoming | 6,784 | 7,349 | 108.33% | 6,784 | 6,151 | 90.67% |

Source: U.S. Department of Education, NCES, 1990-91 CCD and 1990-91 SASS (Public School)

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Table 4.--Total Student Enrollment for 1990-91 CCD, 1990-91 SASS Before and After CCD Adjustment

| STATE | Before Adjustment | | | After Adjustment | | |
|-------|------|------|----------|------|------|----------|
| | CCD | SASS | SASS/CCD | CCD | SASS | SASS/CCD |
| U.S Total | 41,223,804 | 40,103,702 | 97.28% | 41,223,804 | 39,938,208 | 96.88% |
| Alabama | 721,806 | 688,980 | 95.45% | 721,806 | 688,940 | 95.45% |
| Alaska | 113,874 | 109,112 | 95.82% | 113,874 | 107,270 | 94.20% |
| Arizona | 639,853 | 590,529 | 92.29% | 639,853 | 578,368 | 90.39% |
| Arkansas | 436,286 | 415,981 | 95.35% | 436,286 | 415,936 | 95.34% |
| California | 4,950,474 | 4,798,136 | 96.92% | 4,950,474 | 4,794,623 | 96.85% |
| Colorado | 574,213 | 575,845 | 100.28% | 574,213 | 575,790 | 100.27% |
| Connecticut | 469,123 | 453,813 | 96.74% | 469,123 | 453,349 | 96.64% |
| Delaware | 99,658 | 96,375 | 96.71% | 99,658 | 96,375 | 96.71% |
| District of Columbi | 80,694 | 78,415 | 97.18% | 80,694 | 77,974 | 96.63% |
| Florida | 1,861,592 | 1,766,890 | 94.91% | 1,861,592 | 1,683,290 | 90.42% |
| Georgia | 1,151,687 | 1,102,779 | 95.75% | 1,151,687 | 1,097,248 | 95.27% |
| Hawaii | 171,708 | 176,149 | 102.59% | 171,708 | 176,123 | 102.57% |
| Idaho | 220,840 | 215,692 | 97.67% | 220,840 | 215,650 | 97.65% |
| Illinois | 1,821,407 | 1,804,706 | 99.08% | 1,821,407 | 1,803,863 | 99.04% |
| Indiana | 954,581 | 894,518 | 93.71% | 954,581 | 894,233 | 93.68% |
| Iowa | 483,652 | 479,023 | 99.04% | 483,652 | 478,941 | 99.03% |
| Kansas | 437,034 | 453,170 | 103.69% | 437,034 | 453,170 | 103.69% |
| Kentucky | 636,401 | 617,625 | 97.05% | 636,401 | 614,306 | 96.53% |
| Louisiana | 784,757 | 738,300 | 94.08% | 784,757 | 736,937 | 93.91% |
| Maine | 215,149 | 218,614 | 101.61% | 215,149 | 218,583 | 101.60% |
| Maryland | 715,176 | 675,491 | 94.45% | 715,176 | 675,491 | 94.45% |
| Massachusetts | 834,314 | 810,755 | 97.18% | 834,314 | 800,915 | 96.00% |
| Michigan | 1,581,925 | 1,418,907 | 89.69% | 1,581,925 | 1,415,801 | 89.50% |
| Minnesota | 756,374 | 719,581 | 95.14% | 756,374 | 714,330 | 94.44% |
| Mississippi | 502,417 | 506,697 | 100.85% | 502,417 | 505,664 | 100.65% |
| Missouri | 812,234 | 818,239 | 100.74% | 812,234 | 809,915 | 99.71% |
| Montana | 152,974 | 157,530 | 102.98% | 152,974 | 157,530 | 102.98% |
| Nebraska | 274,081 | 260,030 | 94.87% | 274,081 | 259,974 | 94.85% |
| Nevada | 201,316 | 198,751 | 98.73% | 201,316 | 197,376 | 98.04% |
| New Hampshire | 172,785 | 147,023 | 85.09% | 172,785 | 147,023 | 85.09% |
| New Jersey | 1,089,646 | 1,112,872 | 102.13% | 1,089,646 | 1,112,101 | 102.06% |
| New Mexico | 301,881 | 292,482 | 96.89% | 301,881 | 292,482 | 96.89% |
| New York | 2,598,337 | 2,384,989 | 91.79% | 2,598,337 | 2,380,910 | 91.63% |
| North Carolina | 1,086,871 | 1,069,603 | 98.41% | 1,086,871 | 1,069,310 | 98.38% |
| North Dakota | 117,825 | 118,778 | 100.81% | 117,825 | 118,547 | 100.61% |
| Ohio | 1,771,516 | 1,716,955 | 96.92% | 1,771,516 | 1,715,638 | 96.85% |
| Oklahoma | 579,087 | 574,546 | 99.22% | 579,087 | 574,517 | 99.21% |
| Oregon | 484,652 | 459,106 | 94.73% | 484,652 | 459,095 | 94.73% |
| Pennsylvania | 1,667,834 | 1,722,046 | 103.25% | 1,667,834 | 1,721,896 | 103.24% |
| Rhode Island | 138,813 | 148,027 | 106.64% | 138,813 | 147,993 | 106.61% |
| South Carolina | 622,112 | 649,828 | 104.46% | 622,112 | 649,513 | 104.40% |
| South Dakota | 129,164 | 148,790 | 115.19% | 129,164 | 148,722 | 115.14% |
| Tennessee | 824,595 | 789,393 | 95.73% | 824,595 | 789,045 | 95.69% |
| Texas | 3,382,887 | 3,323,523 | 98.25% | 3,382,887 | 3,323,185 | 98.24% |
| Utah | 447,891 | 438,875 | 97.99% | 447,891 | 438,708 | 97.95% |
| Vermont | 95,762 | 90,632 | 94.64% | 95,762 | 90,632 | 94.64% |
| Virginia | 998,601 | 943,179 | 94.45% | 998,601 | 942,699 | 94.40% |
| Washington | 839,709 | 897,997 | 106.94% | 839,709 | 889,590 | 105.94% |
| West Virginia | 322,389 | 336,584 | 104.40% | 322,389 | 331,372 | 102.79% |
| Wisconsin | 797,621 | 796,131 | 99.81% | 797,621 | 795,561 | 99.74% |
| Wyoming | 98,226 | 101,710 | 103.55% | 98,226 | 101,704 | 103.54% |

Source: U.S. Department of Education, NCES, 1990-91 CCD and 1990-91 SASS (Public School)

# Table 5.--Number of Hispanic students (grades K-12)

| FIPS CODE | STATE | ORIGINAL 1990-91 SASS DATA | AFTER CCD ADJUSTMENT | PERCENT CHANGED |
|---|---|---|---|---|
| Totals | | 4,444,996 | 4,438,542 | -.1452 |
| 01 | Alabama | 1,822 | 1,822 | 0 |
| 02 | Alaska | 2,371 | 2,356 | -0.6428 |
| 04 | Arizona | 156,165 | 15,4313 | -1.1856 |
| 05 | Arkansas | 3,353 | 3,353 | 0 |
| 06 | California | 1,675,266 | 1,674,778 | -0.0291 |
| 08 | Colorado | 96,763 | 96,763 | 0 |
| 09 | Connecticut | 41,091 | 41,091 | 0 |
| 10 | Delaware | 2,288 | 2,288 | 0 |
| 11 | Washington, D.C. | 6,892 | 6,881 | -0.1651 |
| 12 | Florida | 234,373 | 231,228 | -1.342 |
| 13 | Georgia | 9,489 | 9,444 | -0.4663 |
| 15 | Hawaii | 7,086 | 7,086 | 0 |
| 16 | Idaho | 11,575 | 11,575 | 0 |
| 17 | Illinois | 137,087 | 137,041 | -0.034 |
| 18 | Indiana | 15,580 | 15,567 | -0.0805 |
| 19 | Iowa | 5,807 | 5,807 | 0 |
| 20 | Kansas | 20,031 | 20,031 | 0 |
| 21 | Kentucky | 1,779 | 1,763 | -0.9042 |
| 22 | Louisiana | 11,542 | 11,542 | 0 |
| 23 | Maine | 713 | 713 | 0 |
| 24 | Maryland | 10,631 | 10,631 | 0 |
| 25 | Maine | 71,174 | 71,069 | -0.1474 |
| 26 | Michigan | 34,897 | 34,842 | -0.157 |
| 27 | Minnesota | 10,739 | 10,727 | -0.1111 |
| 28 | Mississippi | 717 | 717 | 0 |
| 29 | Missouri | 6,837 | 6,809 | -0.4027 |
| 30 | Montana | 1,914 | 1,914 | 0 |
| 31 | Nebraska | 6,234 | 6,234 | 0 |
| 32 | Nevada | 21,616 | 21,616 | 0 |
| 33 | New Hampshire | 1,204 | 1,204 | 0 |
| 34 | New Jersey | 134,153 | 134,133 | -0.015 |
| 35 | New Mexico | 129,530 | 129,530 | 0 |
| 36 | New York | 333,730 | 333,565 | -0.0496 |
| 37 | North Carolina | 7,190 | 7,190 | 0 |
| 38 | North Dakota | 713 | 713 | 0 |
| 39 | Ohio | 28,364 | 28,312 | -0.1815 |
| 40 | Oklahoma | 13,959 | 13,959 | 0 |
| 41 | Oregon | 19,488 | 19,488 | 0 |
| 42 | Pennsylvania | 44,020 | 44,020 | 0 |
| 44 | Rhode Island | 9,329 | 9,329 | 0 |
| 45 | South Carolina | 2,877 | 2,877 | 0 |
| 46 | South Dakota | 738 | 738 | 0 |
| 47 | Tennessee | 2,759 | 2,759 | 0 |
| 48 | Texas | 1,006,927 | 1,006,917 | -0.001 |
| 49 | Utah | 16,601 | 16,599 | -0.0076 |
| 50 | Vermont | 276 | 276 | 0 |
| 51 | Virginia | 17,302 | 17,302 | 0 |
| 52 | Washington | 48,434 | 48,058 | -0.776 |
| 54 | West Virginia | 675 | 675 | 0 |
| 55 | Wisconsin | 15,109 | 15,109 | 0 |
| 56 | Wyoming | 5,789 | 5,789 | 0 |

Source : U.S. Department of Education, NCES, 1990-91 CCD, 1990-91 SASS, and 1988-89 CCD

## Table 6.--Number of students participating in extended day or before- or after-school day-care

| FIPS CODE | STATE | ORIGINAL 1990-91 SASS DATA | AFTER CCD ADJUSTMENT | PERCENT CHANGED |
|---|---|---|---|---|
| Totals | | 882,836 | 868,691 | -1.6021 |
| 01 | Alabama | 9,041 | 9,041 | 0 |
| 02 | Alaska | 1,412 | 1,412 | 0 |
| 04 | Arizona | 13,836 | 12,869 | -6.9948 |
| 05 | Arkansas | 3,024 | 3,024 | 0 |
| 06 | California | 178,109 | 175,831 | -1.2791 |
| 08 | Colorado | 8,802 | 8,802 | 0 |
| 09 | Connecticut | 16,806 | 16,806 | 0 |
| 10 | Delaware | 1,679 | 1,679 | 0 |
| 11 | Washington, D.C. | 6,559 | 6,540 | -0.2892 |
| 12 | Florida | 74,273 | 70,174 | -5.5198 |
| 13 | Georgia | 18,644 | 18,574 | -0.3792 |
| 15 | Hawaii | 22,788 | 22,788 | 0 |
| 16 | Idaho | 559 | 559 | 0 |
| 17 | Illinois | 51,859 | 51,859 | 0 |
| 18 | Indiana | 8,350 | 8,304 | -0.5579 |
| 19 | Iowa | 4,106 | 4,106 | 0 |
| 20 | Kansas | 4,337 | 4,337 | 0 |
| 21 | Kentucky | 24,357 | 22,520 | -7.5393 |
| 22 | Louisiana | 16,716 | 16,716 | 0 |
| 23 | Maine | 2,061 | 1,115 | -45.9068 |
| 24 | Maryland | 15,874 | 15,874 | 0 |
| 25 | Massachusetts | 16,628 | 16,196 | -2.5991 |
| 26 | Michigan | 30,309 | 30,130 | -0.5876 |
| 27 | Minnesota | 12,278 | 12,133 | -1.1817 |
| 28 | Mississippi | 5,164 | 5,164 | 0 |
| 29 | Missouri | 14,958 | 12,196 | -18.4604 |
| 30 | Montana | 374 | 374 | 0 |
| 31 | Nebraska | 2,555 | 2,555 | 0 |
| 32 | Nevada | 4,042 | 4,042 | 0 |
| 33 | New Hampshire | 1,771 | 1,771 | 0 |
| 34 | New Jersey | 24,771 | 24,771 | 0 |
| 35 | New Mexico | 7,525 | 7,525 | 0 |
| 36 | New York | 82,619 | 82,609 | -0.0125 |
| 37 | North Carolina | 33,776 | 33,776 | 0 |
| 38 | North Dakota | 498 | 498 | 0 |
| 39 | Ohio | 19,973 | 19,973 | 0 |
| 40 | Oklahoma | 5,280 | 5,280 | 0 |
| 41 | Oregon | 6,631 | 6,432 | -3.0092 |
| 42 | Pennsylvania | 17,440 | 17,440 | 0 |
| 44 | Rhode Island | 531 | 510 | -3.8913 |
| 45 | South Carolina | 5,675 | 5,675 | 0 |
| 46 | South Dakota | 192 | 192 | 0 |
| 47 | Tennessee | 12,593 | 12,593 | 0 |
| 48 | Texas | 47,246 | 47,246 | 0 |
| 49 | Utah | 5,531 | 5,531 | 0 |
| 50 | Vermont | 1,028 | 1,028 | 0 |
| 51 | Virginia | 17,226 | 17,226 | 0 |
| 52 | Washington | 9,746 | 9,614 | -1.3611 |
| 54 | West Virginia | 5,218 | 5,218 | 0 |
| 55 | Wisconsin | 7,652 | 7,652 | 0 |
| 56 | Wyoming | 413 | 413 | 0 |

Source: U.S. Department of Education, NCES, 1990-91 CCD, 1990-91 SASS, and 1988-89 CCD

# Table 7.--Number of students who receive free or reduced price lunches

| FIPS CODE | STATE | ORIGINAL 1990-91 SASS DATA | AFTER CCD ADJUSTMENT | PERCENT CHANGED |
|---|---|---|---|---|
| | Totals | 12,703,441 | 12,448,336 | -2.0082 |
| 01 | Alabama | 305,693 | 300,268 | -1.7745 |
| 02 | Alaska | 22,668 | 19,547 | -13.765 |
| 04 | Arizona | 203,118 | 201,043 | -1.0214 |
| 05 | Arkansas | 163,881 | 163,881 | 0 |
| 06 | California | 1,685,105 | 1,661,018 | -1.4294 |
| 08 | Colorado | 133,597 | 129,012 | -3.4324 |
| 09 | Connecticut | 88,622 | 87,780 | -0.9502 |
| 10 | Delaware | 22,822 | 22,651 | -0.7482 |
| 11 | Washington, D.C. | 41,589 | 41,137 | -1.0856 |
| 12 | Florida | 685,576 | 669,234 | -2.3836 |
| 13 | Georgia | 391,718 | 384,857 | -1.7514 |
| 15 | Hawaii | 49,563 | 49,563 | 0 |
| 16 | Idaho | 61,041 | 58,135 | -4.761 |
| 17 | Illinois | 613,978 | 609,254 | -0.7695 |
| 18 | Indiana | 211,097 | 204,952 | -2.9111 |
| 19 | Iowa | 114,268 | 113,205 | -0.9303 |
| 20 | Kansas | 114,723 | 111,767 | -2.5769 |
| 21 | Kentucky | 227,837 | 223,333 | -1.9772 |
| 22 | Louisiana | 360,467 | 343,349 | -4.7488 |
| 23 | Maine | 6,0021 | 56,981 | -5.0654 |
| 24 | Maryland | 179,356 | 179,356 | 0 |
| 25 | Massachusetts | 180,225 | 175,955 | -2.3691 |
| 26 | Michigan | 322,008 | 312,635 | -2.9109 |
| 27 | Minnesota | 164,839 | 148,575 | -9.8669 |
| 28 | Mississippi | 280,784 | 278,484 | -0.8194 |
| 29 | Missouri | 241,197 | 236,993 | -1.7429 |
| 30 | Montana | 50,880 | 50,230 | -1.2779 |
| 31 | Nebraska | 63,645 | 62,423 | -1.9195 |
| 32 | Nevada | 35,677 | 33,887 | -5.0161 |
| 33 | New Hampshire | 20,535 | 18,840 | -8.2564 |
| 34 | New Jersey | 266,759 | 266,019 | -0.2773 |
| 35 | New Mexico | 137,995 | 137,704 | -0.2109 |
| 36 | New York | 849,759 | 823,229 | -3.1221 |
| 37 | North Carolina | 328,403 | 328,217 | -0.0569 |
| 38 | North Dakota | 38,320 | 37,247 | -2.7997 |
| 39 | Ohio | 405,090 | 402,992 | -0.5181 |
| 40 | Oklahoma | 242,055 | 235,361 | -2.7657 |
| 41 | Oregon | 108,591 | 107,440 | -1.0604 |
| 42 | Pennsylvania | 396,656 | 393,555 | -0.7817 |
| 44 | Rhode Island | 34,177 | 33,679 | -1.4548 |
| 45 | South Carolina | 243,378 | 243,200 | -0.0731 |
| 46 | South Dakota | 54,253 | 52,979 | -2.3481 |
| 47 | Tennessee | 259,618 | 259,460 | -0.0609 |
| 48 | Texas | 1,328,759 | 1,284,815 | -3.3072 |
| 49 | Utah | 102,843 | 102,299 | -0.5296 |
| 50 | Vermont | 17,234 | 17,234 | 0 |
| 51 | Virginia | 232,654 | 232,654 | 0 |
| 52 | Washington | 222,182 | 215,759 | -2.8909 |
| 54 | West Virginia | 140,398 | 136,880 | -2.5062 |
| 55 | Wisconsin | 172,631 | 167,900 | -2.7405 |
| 56 | Wyoming | 25,155 | 21,371 | -15.0441 |

Source: U.S. Department of Education, NCES, 1990-91 CCD, 1990-91 SASS, and 1988-89 CCD
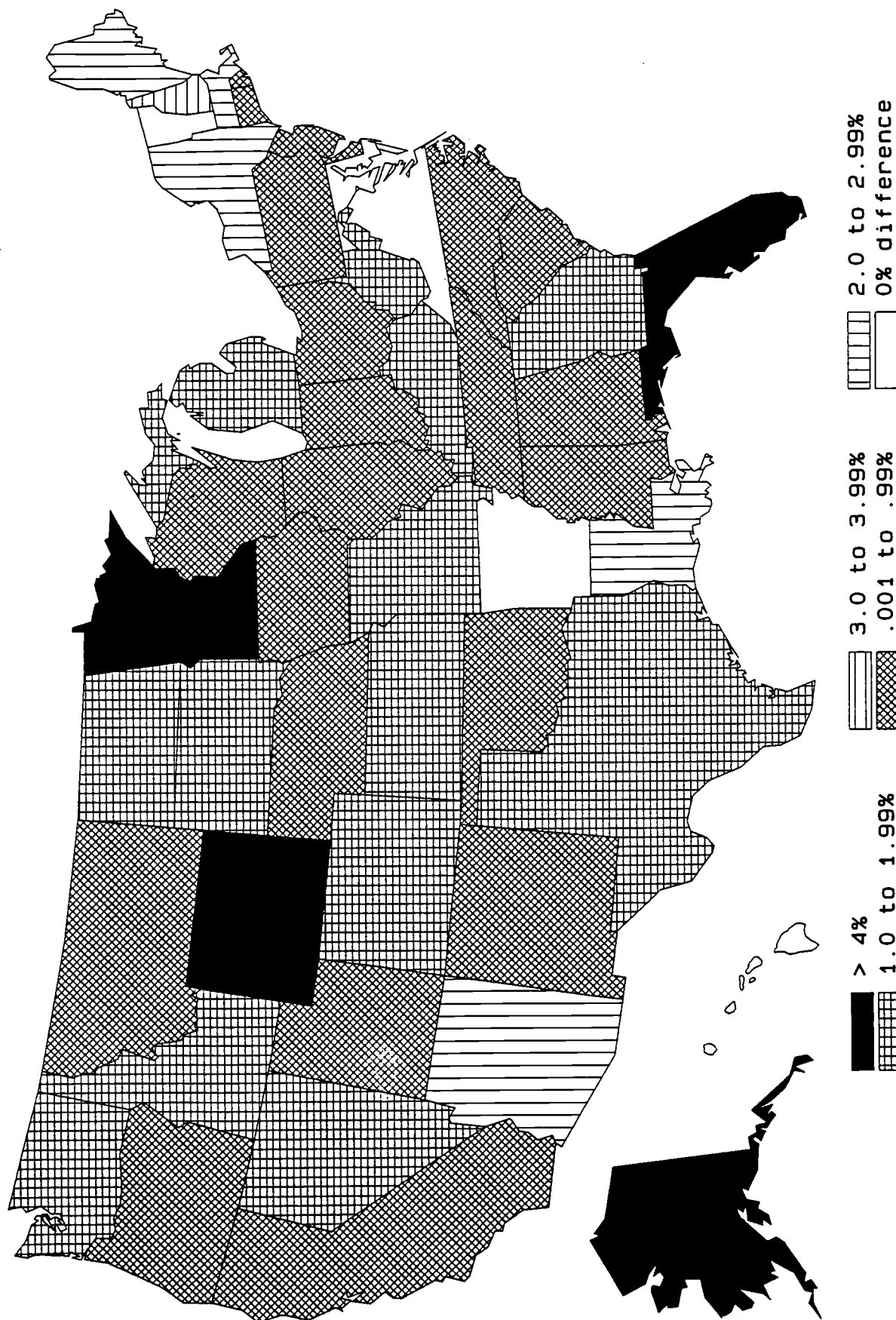
## Maps for Number of Full-Time Equivalent Teachers and Total Student Enrollment

The differences between estimates for total student enrollment and the number of full-time equivalent teachers from the 1990-91 SASS and CCD-adjusted estimates are expressed on the following 2 pages in map format. These maps indicate the percentage difference between SASS and CCD-adjusted estimates by state and the District of Columbia. CCD-adjusted estimates are either the same or lower than SASS estimates for total student enrollment and the number of full-time equivalent teachers. For total student enrollment, all individual states are identified in six categories of percent difference: 0 percent, .001 to .99 percent, 1.0 to 1.99 percent, 2.0 to 2.99 percent, 3.0 to 3.99 percent, and greater than 4 percent. For full-time equivalent teachers, all individual states are identified in five separate categories of percent difference: 0 percent, 0 to 4.99 percent, 5 to 9.99 percent, 10 to 14.99 percent, and greater than 15 percent.

The following two maps correspond to tables 3 and 4 on pages 12 and 13. Exact percentages for the difference between SASS estimates and CCD-adjusted estimates are located in these two tables. The percent differences for the two maps are based upon CCD-adjusted estimates being the same or lower than SASS estimates. For example, in *Figure 1: Percent Difference of Total Student Enrollment*, states which fall under the category 1.0 percent to 1.99, are states in which CCD-adjusted estimates are from one percent to 1.99 percent less than SASS estimates.
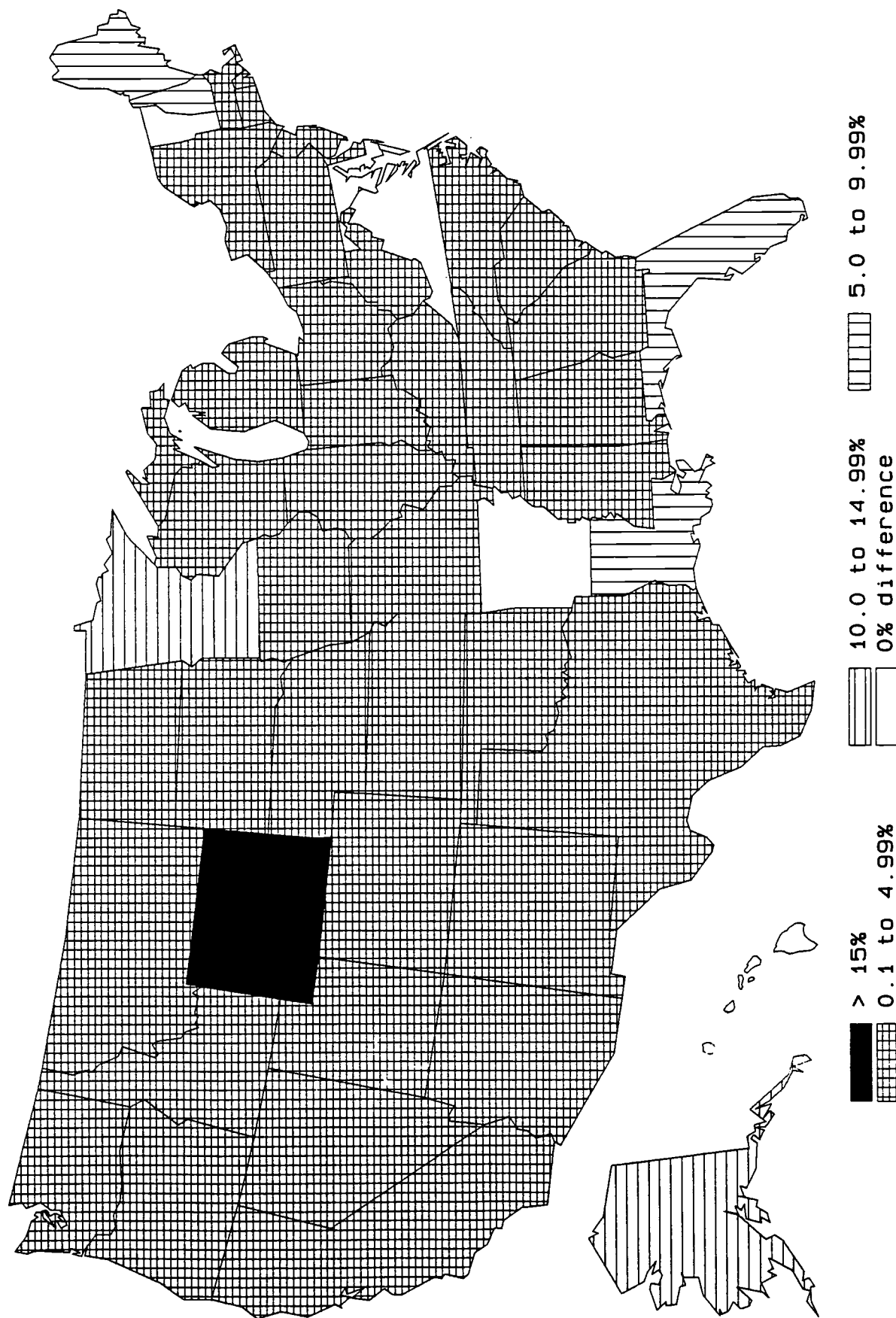
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# Figure 1: Percent Difference of Total Student Enrollment

Between SASS 1990-91 and CCD 1990-91



Legend:

- █ > 4%
- ▤ 3.0 to 3.99%
- ▨ 2.0 to 2.99%
- ▦ 1.0 to 1.99%
- ▦ .001 to .99%
- ☐ 0% difference

# Figure 2: Percent Difference of Full-time Equivalent Teachers

Between SASS 1990-91 and CCD 1990-91



Legend:

- ■ > 15%
- ▦ 0.1 to 4.99%
- ▥ 10.0 to 14.99%
- ▭ 0% difference
- ▥ 5.0 to 9.99%

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Out of 8969 schools in the SASS dataset, nine control numbers for schools with extra records were found. This problem was diagnosed as "duplicates." The control numbers matched with four schools which are verified either as original schools or their "split." These school do not represent a major contribution toward overestimates but are noted as a source of overestimation in Table 8 below.

**Table 8.--1990-91 SASS Schools with duplicate Identification numbers**

| Observation | ACCDID | CNTLNUM |
|---|---|---|
| 1 | 010114000419 | 001103550138 |
| 2 | 010114000419 | 001803550132 |
| 3 | 069101609229 | 006120650139 |
| 4 | 069101609229 | 006820650139 |
| 5 | 250741001146 | 025106950130 |
| 6 | 250741001146 | 025806950134 |
| 7 | 280240000465 | 028105250130 |
| 8 | 280240000465 | 028805250134 |
| 9 | 280240000465 | 028905250132 |

Source: U.S. Department of Education, NCES, 1990-91 CCD, 1990-91 SASS, and 1988-89 CCD

## V. Results and Conclusions

Tables 3 and 4 demonstrate the differences between SASS estimates for FTES and total student enrollment, the key estimates. SASS and CCD-adjusted data report the same number of students in only five states: Arkansas, Hawaii, Maryland, Vermont, and Virginia. The difference between total enrollment reported in the 1990-91 SASS and the CCD-adjusted total enrollment is between 0 and one percent in 24 states. In four states, the CCD-adjusted estimates are approximately 5 percent lower than the original SASS estimates: Alaska, Florida, Minnesota, and Wyoming. The differences in estimates from SASS and CCD-adjusted estimates on the number of full-time equivalent teachers (table 3) is as high as 19 percent in Wyoming. Other states which report significantly lower CCD-adjusted estimates than SASS are Alaska (13 percent), Minnesota (11 percent), and New Hampshire (9 percent). Only 5 states report the same numbers from SASS data and CCD-adjusted data: Arkansas, Hawaii, Maryland, Vermont, and Virginia.

A comparison of SASS and CCD-adjusted estimates for total student enrollment and full-time equivalent teachers indicate that the problem of overestimating in the 1990-91 SASS occurs more frequently in some states. For example, SASS estimates in Wyoming are over 5 percent higher than CCD-adjusted estimates for total student enrollment and over 19 percent higher

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for the number of full-time equivalent teachers . Alaska and Minnesota report approximately 5 percent higher SASS estimates for total student enrollment. These two states also report significantly higher estimate for the number of full-time equivalent teachers (13 and 11 percent, respectively). In Florida, SASS reports approximately 5 percent higher total student enrollments and about 6 percent higher full-time equivalent teachers than CCD-adjusted estimates. CCD-adjusted estimates and SASS estimates, however, in five states (Arkansas, Hawaii, Maryland, Vermont, and Virginia) are the same.

Estimates for the number of Hispanic students in grades K through 12 are the same in 32 states for 1990-91 SASS estimates and CCD-adjusted estimates (table 5). In addition, for all states and the District of Columbia the difference in estimates is less than one percent. SASS estimates on the number of students participating in extended day or before- or after-school day-care (table 6) and the SASS CCD-adjusted estimates, however, differ considerably in some states. In Maine, CCD-adjusted data report 45 percent less than SASS data; in Missouri, the difference in estimates is 18 percent.

The difference in SASS estimates for the number of students who receive free or reduced price lunches (table 7) and SASS CCD-adjusted estimates differ by less than one percent in only 18 states. In Wyoming and Alaska, SASS data report 15 and 13 percent higher numbers than the SASS CCD-adjusted data, respectively. SASS CCD-adjusted estimates for this characteristic are 8 percent less than SASS estimates in New Hampshire. In Idaho, Louisiana, Maine, and Nevada the difference is approximately 5 percent.

## Questions and Concerns

Examining estimates for total enrollment and full-time equivalent teachers from the 1990-91 SASS in relation to CCD-adjusted estimates raise some questions and issues about the source of overestimation:

- How do schools in Arkansas, Hawaii, Maryland, Vermont, and Virginia calculate both student enrollment and full-time equivalent teachers?

- How is this different than Wyoming, Alaska, Minnesota, and Florida?

- Do states use the same formula, in the CCD, for counting part-time teachers in determining the number of full-time equivalent teachers?

- Do states count specific categories of students in the CCD (i.e., technical/vocational and special education) as being part of the total enrollment?

# Listing of NCES Working Papers to Date

| Number | Title | Contact |
|--------|-------|---------|
| 94-01 | Schools and Staffing Survey (SASS) Papers Presented at Meetings of the American Statistical Association | Dan Kasprzyk |
| 94-02 | Generalized Variance Estimate for Schools and Staffing Survey (SASS) | Dan Kasprzyk |
| 94-03 | 1991 Schools and Staffing Survey (SASS) Reinterview Response Variance Report | Dan Kasprzyk |
| 94-04 | The Accuracy of Teachers' Self-reports on their Postsecondary Education: Teacher Transcript Study, Schools and Staffing Survey | Dan Kasprzyk |
| 94-05 | Cost-of-Education Differentials Across the States | William Fowler |
| 94-06 | Six Papers on Teachers from the 1990-91 SASS and Other Related Surveys | Dan Kasprzyk |
| 94-07 | Data Comparability and Public Policy: New Interest in Public Library Data Papers Presented at Meetings of the American Statistical Association | Carrol Kindel |
| 95-01 | Schools and Staffing Survey: 1994 papers presented at the 1994 Meeting of the American Statistical Association | Dan Kasprzyk |
| 95-02 | QED Estimates of the 1990-91 Schools and Staffing Survey: Deriving and Comparing QED School Estimates with CCD Estimates | Dan Kasprzyk |
| 95-03 | Schools and Staffing Survey: 1990-91 SASS Cross-Questionnaire Analysis | Dan Kasprzyk |

| Number | Title | Contact |
|--------|-------|---------|
| 95-04 | National Education Longitudinal Study of 1988: Second Follow-up Questionnaire Content Areas and Research Issues | Jeffrey Owings |
| 95-05 | National Education Longitudinal Study of 1988: Conducting Trend Analyses of NLS-72, HS&B, and NELS:88 Seniors | Jeffrey Owings |
| 95-06 | National Education Longitudinal Study of 1988: Conducting Cross-Cohort Comparisons Using HS&B, NAEP, and NELS:88 Academic Transcript Data | Jeffrey Owings |
| 95-07 | National Education Longitudinal Study of 1988: Conducting Trend Analyses HS&B and NELS:88 Sophomore Cohort Dropouts | Jeffrey Owings |
| 95-08 | CCD Adjustments to the 1990-91 SASS: A Comparison of Estimates | Dan Kasprzyk |

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